

IN THE CLAIMS:

The claims have been amended as follows:

1. (Currently Amended) A method for updating presence information regarding [[an]] a target end user in a presence server database based on information derived from a telephony-related action, the method comprising:

(a) receiving a signaling system seven (SS7) message in response to a telephony-related action performed by [[an]] a target end user to which other end users are subscribed in a presence database;

(b) determining, based on the SS7 message, whether presence registration processing is required for the target end user;

(c) in response to determining that presence registration processing is required for the target end user, automatically generating a presence registration message including presence information usable by a presence server for automatically indicating to [[other]] the end users who are subscribed to the target end user in a presence database a communication medium for contacting the target end user using a text messaging protocol and indicating that the target end user is currently available to receive text messaging protocol messages via the communications medium; and

(d) transmitting the presence registration message to the presence server over an IP network.

2. (Currently Amended) The method of claim 1 wherein the telephony-related action includes dialing a called party telephone number utilizing a PSTN telephone to initiate a call from the target end user to the called party telephone number and the signaling system seven message is an IAM message.

3. (Original) The method of claim 1 wherein the telephony-related action includes entering DTMF digits using a PSTN telephone handset after a call has been established, the DTMF digits forming a code for instructing an end office to formulate the SS7 message.

4. (Currently Amended) The method of claim 3 wherein the SS7 message is a transaction capabilities application part (TCAP) message containing presence information for the target end user.

5. (Currently Amended) The method of claim 1 A method for updating presence information regarding a target end user in a presence database based on information derived from a signaling message relating to a telephony-related action performed by the target end user, the method comprising:

(a) receiving a signaling system 7 (SS7) message in response to a telephony-related action performed by a target end user, wherein the telephony-related action is the activation or change in location of a mobile telephone handset and the SS7 message is a message for updating the status of the subscriber target end user in at least one of a

home location register (HLR) and a visitor location register (VLR)[[.]] ;
and

(b) intercepting the SS7 message, extracting information from the SS7 message, and using the information extracted from the SS7 message to update presence protocol information for the target end user in a presence database.

6. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating a presence protocol message.

7. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating a session initiation protocol (SIP) message.

8. (Previously Presented) The method of claim 1 wherein automatically generating a presence registration message includes automatically generating an instant messaging and presence protocol (IMPP) message.

9. (Original) The method of claim 1 comprising, in response to receiving the SS7 message, sending a second message to an accounting and billing system.

10. (Original) The method of claim 9 wherein the second message is a copy of the SS7 message.

11. (Currently Amended) A method for processing a query to a presence server database, the method comprising:

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- (a) receiving, at presence registration and routing node, an IP message for determining presence information for a first end user to which other end users are subscribed in a presence database, the presence information being usable by a presence server for automatically indicating to the end users subscribed to the first end user a communication medium for contacting the first end user using a text messaging protocol and the fact that the first end user is currently available to receive text messaging protocol messages via the communications medium;
- (b) formulating a query to a presence database for obtaining the presence information;
- (c) obtaining the presence information from the presence database; and
- (d) forwarding the presence information to a second end user, wherein the second end user uses the presence information to determine the appropriate communication medium for contacting the first end user using the text messaging protocol and the availability of the first end user to receive text messaging protocol communications via the communications medium.

12. (Original) The method of claim 11 wherein receiving an IP message includes receiving a presence protocol message.

13. (Original) The method of claim 12 wherein receiving a presence protocol message includes receiving a fetch message requesting presence information regarding the entity.

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14. (Previously Presented) The method of claim 11 wherein forwarding the presence information to a second end user includes forwarding a presence protocol message to the second end user.
15. (Previously Presented) The method of claim 14 wherein forwarding a presence protocol message includes forwarding a notify message to the second end user.
16. (Original) The method of claim 11 wherein receiving an IP message includes receiving a session initiation protocol (SIP) message.
17. (Original) The method of claim 11 wherein receiving an IP message includes receiving an instant messaging and presence protocol (IMPP) message.
18. (Original) The method of claim 11 wherein obtaining the presence information from the presence database includes obtaining the presence information from a presence database located internal to the presence registration and routing node.
19. (Original) The method of claim 11 wherein obtaining the presence information from the presence database includes obtaining the presence information from a presence database located external to the presence registration and routing node.
20. (Original) The method of claim 11 comprising, in response to receiving the IP message, sending a second message to an accounting and billing system.
21. (Original) The method of claim 20 wherein the second message is a copy of the IP message.

22. (Currently Amended) A presence registration and routing node for updating presence information regarding an end user in a presence server database, the presence registration and routing node comprising:

(a) a communication module for receiving an SS7 message relating to [[an]] a target end user, to which other end users are subscribed in a presence database and for determining whether presence registration processing is required for the SS7 message; and

(b) a presence server message generator for, if the communication module determines that presence registration processing is required, for receiving a copy of the SS7 message and for automatically generating a presence registration message including presence information being usable by a presence server for automatically indicating to [[other]] the end users subscribed to the target end user a communication medium for contacting the target end user and the fact that the target end user is currently available to receive text messaging protocol messages via the communications medium.

23. (Previously Presented) The presence registration and routing node of claim 22 comprising an advanced database communication module for encapsulating the presence registration message in an IP packet and transmitting the IP packet to a presence server over an IP network.

24. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is a session initiation protocol (SIP) message.

25. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is a presence protocol message.

26. (Previously Presented) The presence registration and routing node of claim 22 wherein the presence registration message is an instant messaging and presence protocol (IMPP) message.

27. (Original) The presence registration and routing node of claim 22 wherein the SS7 message is an ISDN user part (ISUP) message.

28. (Original) The presence registration and routing node of claim 22 wherein the SS7 message is a transaction capabilities application part (TCAP) message.

29. (Currently Amended) A presence registration and routing node for updating presence information regarding an end user in a presence server database, the presence registration and routing node comprising:

- a communication module for receiving an SS7 message from an SS7 network; and
- a presence server message generator for generating, based on the SS7 message, a presence-server-compatible message for updating presence information regarding [[an]] a target end user in a presence server database, based on the SS7 message, the presence information including text messaging protocol contact and availability information

regarding the target end user that a presence server automatically sends to end users subscribed to the target end user in a presence database, wherein the SS7 message is a message from a mobile switching center (MSC).

30. (Original) The presence registration and routing node of claim 22 comprising a presence server database operatively associated with the presence server message generator for receiving the presence-server-compatible message and for extracting updating the presence information in response to the presence-server-compatible message.

31. (Original) The presence registration and routing node of claim 30 wherein the presence server database is located internal to the presence registration and routing node.

32. (Original) The presence registration and routing node of claim 30 wherein the presence server database is located external to the presence registration and routing node.

33. (Original) The presence registration and routing node of claim 22 wherein the presence server message generator is adapted to receive presence queries, forward the presence queries to a presence server database, and receive responses from the presence server database.

34. (Original) The presence registration and routing node of claim 22 comprising:

- (a) means for generating an accounting message based on at least one of the SS7 message received by the communication module and the presence-server-compatible message; and
- (b) an accounting and billing system for storing accounting information based on the accounting message.

(35) (Currently Amended) A presence registration and routing node for providing presence information regarding an entity, the presence registration and routing node comprising:

- (a) an advanced database communications module for receiving an IP-encapsulated presence-server-compatible message for determining presence information for a first end user, the presence information indicating a communication medium for contacting the first end user using a text messaging protocol and the fact that the first end user is currently available to receive text messaging protocol messages via the communications medium; and
- (b) a presence server message processor operably associated with the advanced database communications module for forwarding the presence-server-compatible message to a presence server for determining the presence information, wherein the presence server stores the presence information for the first end user, and subscription information indicating a second end user subscribed to automatically receive presence information regarding the first end user and responds

sends a response to the presence-server-compatible message to the second end user, thereby informing [[a]] the second end user of the appropriate communications medium for contacting the first end user using text messaging protocol communications and whether the first end user is currently available to receive text messaging protocol messages via the communications medium.

36. (Original) The presence registration and routing node of claim 35 wherein the presence server message processor is adapted to receive the presence information from the presence server and forward the presence information to the advanced database communications module.

37. (Original) The presence registration and routing node of claim 36 wherein the advanced database communications module is adapted to forward the presence information to an endpoint over an IP network.

38. (Original) The presence registration and routing node of claim 35 comprising a presence server operatively associated with the presence server message processor for providing the presence information to the presence server message processor.

39. (Original) The presence registration and routing node of claim 38 wherein the presence server is located internal to the presence registration and routing node.

40. (Original) The presence registration and routing node of claim 38 wherein the presence server is located external to the presence registration and routing node.

41. (Original) The presence registration and routing node of claim 35 comprising:

- means for generating an accounting message based on the presence-server-compatible message; and
- an accounting and billing system for storing accounting information based on the accounting message.

42. (Currently Amended) A computer program product comprising computer-executable instructions embodied in a computer-readable medium for performing steps comprising:

- receiving a signaling system seven (SS7) message in response to a telephony-related action performed by [[an]] a target end user;
- in response to receiving the SS7 message, formulating an internet protocol (IP) message for updating presence information regarding the target end user managed by a presence server, the presence information including information usable by the presence server for automatically indicating to end users subscribed to the target end user in a presence server database a medium for communicating with the target end user via a text messaging protocol; and
- transmitting the IP message to the presence server over an IP network.

43. (Currently Amended) The computer program product of claim 42 wherein the telephony-related action includes dialing a called party telephone number utilizing a PSTN telephone to initiate a call from the target end user to the called party telephone number and the signaling system seven message is an IAM message.

44. (Original) The computer program product of claim 42 wherein the telephony-related action includes entering DTMF digits using a PSTN telephone handset after a call has been established, the DTMF digits forming a code for instructing an end office to formulate the SS7 message.

45. (Currently Amended) The computer program product of claim 42 wherein the SS7 message is a transaction capabilities application part (TCAP) message containing presence information for the target end user.

46. (Currently Amended) The computer program product of claim 42 wherein the telephony-related action is the activation of a mobile telephone handset and the SS7 message is a message for updating the status of the subscriber the target end user in at least one of a home location register (HLR) and a visitor location register (VLR).

47. (Original) The computer program product of claim 42 wherein formulating an IP message includes formulating a presence protocol message.

48. (Original) The computer program product of claim 42 wherein formulating an IP message includes formulating a session initiation protocol (SIP) message.

49. (Original) The computer program product of claim 42 wherein formulating an IP message includes formulating an instant messaging and presence protocol (IMPP) message.

50. (Original) The computer program product of claim 42 comprising generating an accounting message in response to at least one of the SS7 message and the IP message and forwarding the accounting message to an accounting and billing subsystem.

51. (Currently Amended) A computer program product comprising computer executable instructions embodied in a computer-readable medium for performing steps comprising:

- (a) receiving, at a presence registration and routing node, an IP message for determining presence information for [[an]] a target entity, the presence information including information for contacting the target entity via a text messaging protocol;
- (b) formulating a query to a presence database for obtaining the presence information;
- (c) obtaining the presence information from the presence database based on the query; and
- (d) forwarding the presence information to an end user subscribed to the target entity in the presence database.

52. (Original) The computer program product of claim 51 wherein receiving an IP message includes receiving a presence protocol message.

53. (Currently Amended) The computer program product of claim 52 wherein receiving a presence protocol message includes receiving a fetch message requesting presence information regarding the target entity.

54. (Original) The computer program product of claim 51 wherein forwarding the presence information to an end user includes forwarding a presence protocol message to the end user.

55. (Original) The computer program product of claim 54 wherein forwarding a presence protocol message includes forwarding a notify message to the end user.

56. (Original) The computer program product of claim 51 wherein receiving an IP message includes receiving a session initiation protocol (SIP) message.

57. (Original) The computer program product of claim 51 wherein receiving an IP message includes receiving an instant messaging and presence protocol (IMPP) message.

58. (Original) The computer program product of claim 51 wherein obtaining the presence information from the presence database includes obtaining the presence information from a presence database located internal to the presence registration and routing node.

59. (Original) The computer program product of claim 51 wherein obtaining the presence information from the presence database includes obtaining the presence information from a presence database located external to the presence registration and routing node.

60. (Original) The computer program product of claim 51 comprising generating an accounting message in response to at least one of the IP message and the query and forwarding the accounting message to an accounting and billing subsystem.

61. (Previously Presented) The method of claim 1 comprising routing the SS7 message to its intended destination.

62. (Previously Presented) The presence registration and routing node of claim 22 wherein the communication module is adapted to route the SS7 message to its intended destination.

63. (Previously Presently - Currently Amended) The method of claim 1 wherein the telephony related action comprises activation of the end user's mobile telephone and wherein the presence information indicates that the target end user is currently reachable to receive messaging protocol communications via the target end user's mobile telephone.

64. (Previously Presented - Currently Amended) The method of claim 1 wherein the telephony related action comprises entering a predetermined code via the target end user's wireline telephone and wherein the presence information indicates that the target end user is currently reachable via the end user's wireline telephone.

65. (New) The method of claim 1 wherein steps (a)-(e) are performed at an SS7 signal transfer point capable of transferring SS7 signaling messages between SS7 signaling links.

66. (New) The method of claim 1 wherein the text messaging protocol comprises an instant message protocol.

67. (New) The method of claim 11 wherein steps (a)-(d) are performed at an SS7 signal transfer point capable of transferring SS7 signaling messages between SS7 signaling links.

68. (New) The method of claim 11 wherein the text messaging protocol comprises an instant message protocol.

69. (New) The presence registration and routing node of claim 22 wherein the communication module includes SS7 signal transfer functionality for transferring SS7 signaling messages between SS7 signaling links.

70. (New) The presence registration and routing node of claim 22 wherein the text messaging protocol comprises an instant message protocol.

71. (New) The method of claim 29 wherein steps (a)-(d) are performed at an SS7 signal transfer point capable of transferring SS7 signaling messages between SS7 signaling links.

72. (New) The presence registration and routing node of claim 29 wherein the text messaging protocol comprises an instant message protocol.

73. (New) The presence registration and routing node of claim 35 wherein the advanced database communications module is adapted to transfer IP-encapsulated SS7 signaling messages between IP signaling links.

74. (New) The presence registration and routing node of claim 35 wherein the text messaging protocol comprises an instant message protocol.

75. (New) The computer program product of claim 42 wherein steps (a)-(c) are performed on an SS7 signal transfer point capable of transferring SS7 messages between SS7 signaling links.

76. (New) The computer program products of claim 42 wherein the text messaging protocol comprises an instant messaging protocol.

77. (New) The computer program product of claim 51 wherein steps (a)-(c) are performed on an SS7 signal transfer point capable of transferring SS7 messages between SS7 signaling links.

78. (New) The computer program products of claim 51 wherein the text messaging protocol comprises an instant messaging protocol.